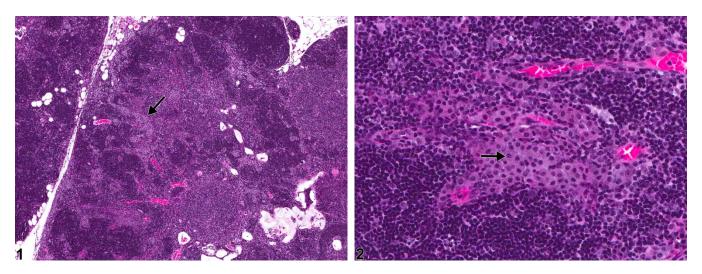


## NTP Nonneoplastic Lesion Atlas

Lymph Node – Hyperplasia, Mast Cell



**Figure Legend: Figure 1** Lymph node - Hyperplasia, Mast cell in a female B6C3F1/N mouse from a chronic study. Mast cells are increased within the lymph node parenchyma (arrow). **Figure 2** Lymph node - Hyperplasia, Mast cell in a female B6C3F1/N mouse from a chronic study (higher magnification of Figure 1). Normal mast cells aggregate around lymph node blood vessels (arrow).

**Comment:** Mast cell hyperplasia is an increase in the number of mast cells above that normally found in lymph nodes (i.e., concurrent controls). Mast cells may accumulate in lymph nodes as individual and/or clusters of cells within the nodal sinuses and parenchyma (Figure 1 and Figure 2, arrows). Mast cells contribute to the induction of the primary immune response by activation and migration from the site of antigen encounter to draining lymph nodes, where they express chemokines that regulate T-cell recruitment. Giemsa or toluidine blue can specifically identify the metachromic mast cell granules.

**Recommendation:** Mast cell hyperplasia should be diagnosed and graded whenever present.

### References:

Elmore SA. 2006. Enhanced histopathology of the lymph nodes. Toxicol Pathol 34:634-647. Full Text: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1783683/

National Toxicology Program. 1999. NTP TR-488. Toxicology and Carcinogenesis Studies of 60-Hz Magnetic Fields in F344/N Rats and B6C3F1 Mice (Whole-Body Exposure Studies). NTP, Research Triangle Park, NC.

Abstract: http://ntp.niehs.nih.gov/go/10166



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### Lymph Node – Hyperplasia, Mast Cell

### References:

Tedia N, Wang H-W, McNeil HP, Di Girolamo N, Hampartzoumian T, Wakefield D, Lloyd A. 1998. Regulation of T lymphocyte trafficking into lymph nodes during an immune response by the chemokines macrophage inflammatory protein (MIP)-1 alpha and MIP-1 beta. J Immunol 161:5663-5672. Abstract: http://www.ncbi.nlm.nih.gov/pubmed/9820547

Wang H-W, Tedia N, Lloyd AR, Wakefield D, McNeil HP. 1998. Mast cell activation and migration to lymph nodes during induction of an immune response in mice. J Clin Invest 102:1617-1626. Abstract: http://www.ncbi.nlm.nih.gov/pubmed/9788976

Willard-Mack CL. 2006. Normal structure, function, and histology of lymph nodes. Toxicol Pathol 34:409-424.

Abstract: <a href="http://www.ncbi.nlm.nih.gov/pubmed/17067937">http://www.ncbi.nlm.nih.gov/pubmed/17067937</a>

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